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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,080	09/29/2003	Hans Ludwig Trautenberg	010408.52704US	4682
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CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			EXAMINER MULL, FRED H	
			ART UNIT	PAPER NUMBER
			3662	

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/672,080

Applicant(s)

TRAUTENBERG, HANS LUDWIG

Examiner

Fred H. Mull

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 August 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-20 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 24 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments on p. 1-3, with respect to the rejection(s) of claims 1-20 have been fully considered but they are not persuasive.

Firstly, applicant argues that the teachings of Chen is in the field of navigation, while the teachings of Eid are in the field of fault tolerant liquid measuring system, and the teachings of Jouan and Whang are in the field of tracking a maneuvering target. Thus, one of ordinary skill in the art would not seek to combine them (p. 2-3).

However, all these references are in the field of Interacting Multiple Models (IMMs). Thus, it would have been obvious to one of skilled in the art of Chen to seek known variations of the IMM used by Chen when choosing to implement the invention of Chen.

Applicant then argues that even if the reference could be combined, the secondary references do not teach selecting "one of said plurality of error models as a function of at least one defined selection standard" (p. 3).

However, the secondary references provide variations of the general IMM procedure. Essentially, they teach using output selection instead of weighted combination of outputs from multiple models because selection provides various improvements over the conventional IMM procedure. The specific teaching about error models is from Chen (p. 87). The contribution of the secondary references is limited to selection as an improvement over weighted combination IMM.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-12 and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of any one of Eid, Jouan and Whang.

Chen discloses providing a plurality of receiver units (RU1, RU2, RU3, RU4) receiving navigation signals from at least one navigation signal transmission unit; providing at least one evaluation unit (EU) for evaluating the received navigation signals, and for transmitting navigation signal error information to user terminals (UT) of a radio navigation system; providing the evaluation unit (EU) with a plurality of error models; and determining a estimated navigation signal error information of the received navigation signals from the multiple models; and transmitting the determined error information to at least one of the radio navigation system and to user terminals (section I and II).

Chen fails to disclose selecting one of said plurality of error models as a function of at least one defined selection standard. Instead, Chen takes a probabilistically weighted sum of the outputs of all filters (i.e. IMM) (p. 86, 2<sup>nd</sup> col., lines 3-4).

Eid discloses that selecting one of a plurality of error models is a know variant of the IMM approach (col. 17, line 6 to col. 19, line 65), where the selecting variant is the second variant, and the IMM variant is the third variant.

It would have been obvious to include the known variant of Eid in place of the IMM output determination of Chen.

Jouan discloses that the complexity and computational load of the IMM approach can prohibit its use (abstract). Jouan further discloses that a multiple model that selects among model outputs (3CV-PAR) will perform reasonably for many applications, and its simplicity and its low computational load compared to IMM make it preferable for these applications (section 8).

It would have been obvious to use a multiple model that selects among model outputs in place of the IMM output determination of Chen in order to provide a multiple model with a low enough computational load to be implemented.

Whang discloses that selecting from among multiple models can produce a more accurate output than IMM (abstract).

It would have been obvious to use a multiple model that selects among model outputs in place of the IMM output determination of Chen in order to get a more accurate output.

In regard to claim 13, the evaluation unit (EU) is constructed as an evaluation unit of at least one satellite navigation system (section I), where the satellite navigation system is GPS.

2. The examiner also finds the following reference(s) relevant:

Zaveri, which discloses that a multiple model which selects from among the model outputs is preferable to an IMM (section 4).

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Applicant is encouraged to consider these documents in formulating their response (if one is required) to this action, in order to expedite prosecution of this application.

### ***Conclusion***

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred H. Mull whose telephone number is 571-272-6975. The examiner can normally be reached on M-F 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 571-272-6979. The fax phone


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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred H. Mull  
Examiner  
Art Unit 3662

fhm

  
THOMAS H. TARCZA  
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